SEQUENCE LISTING

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       Nickbarg, Elliot

<120> METHODS AND REAGENTS RELATING TO INFLAMMATION AND APOPTOSIS

<130> WYTH-P01-001

<140> US 10/523,328
<141> 2005-02-01

<150> 60/400,410
<151> 2002-08-01

<160> 20

<170> PatentIn version 3.2

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Met Ser Thr Glu Ser Met Ile Arg Asp Val Glu Leu Ala Glu Glu Ala
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Leu Pro Lys Lys Thr Gly Gly Pro Gln Gly Ser Arg Arg Cys Leu Phe
            20   25   30

Leu Ser Leu Phe Ser Phe Leu Ile Val Ala Gly Ala Thr Thr Leu Phe
            35   40   45

Cys Leu Leu His Phe Gly Val Ile Gly Pro Gln Arg Glu Glu Ser Pro
        50   55   60

Arg Asp Leu Ser Leu Ile Ser Pro Leu Ala Gln Ala Val Arg Ser Ser
65   70   75   80

Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro
                85   90   95

Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu
                100   105   110

Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser
            115   120   125

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Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly
    130                 135             140

Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala
145                 150                 155                 160

Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro
                165                 170                 175

Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu
                180                 185                 190

Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu
                195                 200                 205

Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly
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Gln Val Tyr Phe Gly Ile Ile Ala Leu
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<210> 2
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<212> DNA
<213> Homo sapiens

<400> 2
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aagagttccc cagggacctc tctctaatca gccctctggc ccaggcagtc agatcatctt   240

ctcgaacccc gagtgacaag cctgtagccc atgttgtagc aaaccctcaa gctgaggggc   300

agctccagtg gctgaaccgc cgggccaatg ccctcctggc caatggcgtg gagctgagag   360

ataaccagct ggtggtgcca tcagagggcc tgtacctcat ctactcccag gtcctcttca   420

agggccaagg ctgcccctcc acccatgtgc tcctcaccca caccatcagc cgcatcgccg   480

tctcctacca gaccaaggtc aacctcctct ctgccatcaa gagcccctgc cagagggaga   540

ccccagaggg ggctgaggcc aagccctggt atgagcccat ctatctggga ggggtcttcc   600

agctggagaa gggtgaccga ctcagcgctg agatcaatcg gcccgactat ctcgactttg   660

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<210> 3
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<212> PRT
<213> Homo sapiens

<400> 3

Met Gly Leu Ser Thr Val Pro Asp Leu Leu Leu Pro Leu Val Leu Leu
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Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile Gly Leu Val Pro
                20   25   30

His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys
            35   40   45

Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys
    50   55   60

Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp
65   70   75   80

Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu
                85   90   95

Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val
            100   105   110

Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg
            115   120   125

Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe
    130   135   140

Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu
145   150   155   160

Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu
                165   170   175

Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr
            180   185   190

Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser
            195   200   205

Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu
    210   215   220

Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys
225   230   235   240

Ser Lys Leu Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu
            245   250   255

Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser
            260   265   270

Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val
            275   280   285

Pro Ser Ser Thr Phe Thr Ser Ser Ser Thr Tyr Thr Pro Gly Asp Cys
    290   295   300

Pro Asn Phe Ala Ala Pro Arg Arg Glu Val Ala Pro Pro Tyr Gln Gly
305   310   315   320

Ala Asp Pro Ile Leu Ala Thr Ala Leu Ala Ser Asp Pro Ile Pro Asn
            325   330   335

Pro Leu Gln Lys Trp Glu Asp Ser Ala His Lys Pro Gln Ser Leu Asp
            340   345   350

Thr Asp Asp Pro Ala Thr Leu Tyr Ala Val Val Glu Asn Val Pro Pro
            355   360   365

Leu Arg Trp Lys Glu Phe Val Arg Arg Leu Gly Leu Ser Asp His Glu
    370   375   380

Ile Asp Arg Leu Glu Leu Gln Asn Gly Arg Cys Leu Arg Glu Ala Gln
385   390   395   400

Tyr Ser Met Leu Ala Thr Trp Arg Arg Arg Thr Pro Arg Arg Glu Ala
            405   410   415

Thr Leu Glu Leu Leu Gly Arg Val Leu Arg Asp Met Asp Leu Leu Gly
            420   425   430

Cys Leu Glu Asp Ile Glu Glu Ala Leu Cys Gly Pro Ala Ala Leu Pro
            435   440   445

Pro Ala Pro Ser Leu Leu Arg
  450   455

<210> 4
<211> 1367
<212> DNA
<213> Homo sapiens

<400> 4

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gatagtgtgt gtccccaagg aaaatatatc caccctcaaa ataattcgat ttgctgtacc     180

aagtgccaca aaggaaccta cttgtacaat gactgtccag gcccggggca ggatacggac     240

tgcagggagt gtgagagcgt ctccttcacc gcttcagaaa accacctcag acactgcctc     300

agctgctcca atgccgaaa g ggaaatgggt caggtggaga tctcttcttg cacagtggac     360

cgggacaccg tgtgtggctg caggaagaac cagtaccggc attattggag tgaaaacctt     420

ttccagtgct tcaattgcag cctctgcctc aatgggaccg tgcacctctc ctgccaggag     480

aaacagaaca ccgtgtgcac ctgccatgca ggtttctttc taagagaaaa cgagtgtgtc     540

tcctgtagta actgtaagaa aagcctggag tgcacgaagt tgtgcctacc ccagattgag     600

aatgttaagg gcactgagga ctcaggcacc acagtgctgt tgcccctggt cattttcttt     660

ggtctttgcc ttttatccct cctcttcatt ggtttaatgt atcgctacca acggtggaag     720

tccaagctct actccattgt ttgtgggaaa tcgacacctg aaaagagggg ggagcttgaa     780

ggaactacta ctaagcccct ggccccaaac ccaagcttca gtcccactcc aggcttcacc     840

cccaccctgg gcttcagtcc cgtgcccagt tccaccttca cctccagctc cacctatacc     900

cccggtgact gtcccaactt tgcggctccc cgcagagagg tggcaccacc ctatcagggg     960

gctgacccca tccttgcgac agccctcgcc tccgacccca tcccaacccc cttcagaagt    1020

gggaggacag cgcccacaag ccacagagcc tagacactga tgaccccgcg acgctgtacg    1080

ccgtggtgga gaacgtgccc ccgttgcgct ggaaggaatt cgtgcggcgc ctagggctga    1140

gcgaccacga gatcgatcgg ctggagctgc agaacgggcg ctgcctgcgc gaggcgcaat    1200

acagcatgct ggcgacctgg aggcggcgca cgccgcggcg cgaggccacg ctggagctgc    1260

tgggacgcgt gctccgcgac atggacctgc tgggctgcct ggaggacatc gaggaggcgc    1320

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<212> PRT
<213> Homo sapiens

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Trp Ala Ala Ala His Ala Leu Pro Ala Gln Val Ala Phe Thr Pro Tyr
            20   25   30

Ala Pro Glu Pro Gly Ser Thr Cys Arg Leu Arg Glu Tyr Tyr Asp Gln
        35   40   45

Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys
    50   55   60

Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp
65   70   75   80

Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys
            85   90   95

Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg
        100   105   110

Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu
        115   120   125

Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg
    130   135   140

Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val
145   150   155   160

Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr
            165   170   175

Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly
            180   185   190

Asn Ala Ser Met Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser
        195   200   205

Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser
    210   215   220

```
Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser
225             230             235             240


Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly
                245             250             255


Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly
                260             265             270


Leu Leu Ile Ile Gly Val Val Asn Cys Val Ile Met Thr Gln Val Lys
                275             280             285


Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro
    290             295             300


Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu
305             310             315             320


Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser
                325             330             335


Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly
                340             345             350


Val Glu Ala Ser Gly Ala Gly Glu Ala Arg Ala Ser Thr Gly Ser Ser
    355             360             365


Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile
    370             375             380


Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln
385             390             395             400


Ala Ser Ser Thr Met Gly Asp Thr Asp Ser Ser Pro Ser Glu Ser Pro
                405             410             415


Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser
                420             425             430


Gln Leu Glu Thr Pro Glu Thr Leu Leu Gly Ser Thr Glu Glu Lys Pro
    435             440             445


Leu Pro Leu Gly Val Pro Asp Ala Gly Met Lys Pro Ser
    450             455             460
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<210> 6
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<212> DNA
<213> Homo sapiens

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cggctcagag aatactatga ccagacagct cagatgtgct gcagcaaatg ctcgccgggc   180

caacatgcaa aagtcttctg taccaagacc tcggacaccg tgtgtgactc ctgtgaggac   240

agcacataca cccagctctg gaactgggtt cccgagtgct tgagctgtgg ctcccgctgt   300

agctctgacc aggtggaaac tcaagcctgc actcgggaac agaaccgcat ctgcacctgc   360

aggcccggct ggtactgcgc gctgagcaag caggaggggt gccggctgtg cgcgccgctg   420

cgcaagtgcc gcccgggctt cggcgtggcc agaccaggaa ctgaaacatc agacgtggtg   480

tgcaagccct gtgcccCggg gacgttctcc aacacgactt catccacgga tatttgcagg   540

ccccaccaga tctgtaacgt ggtggccatc cctgggaatg caagcatgga tgcagtctgc   600

acgtccacgt cccccacccg gagtatggcc caggggcagt acacttaccc cagccagtgt   660

ccacacgatc caacacacg cagccaactc cagaacccag cactgctcca agcacctcct   720

tcctgctccc aatgggcccc agcccccagc tgaagggagc actggcgact tcgctcttcc   780

agttggactg attgtgggtg tgacagcctt gggtctacta ataataggag tggtgaactg   840

tgtcatcatg acccaggtga aaaagaagcc cttgtgcctg cagagagaag ccaaggtgcc   900

tcacttgcct gccgataagg cccggggtac acagggcccc gagcagcagc acctgctgat   960

cacagcgccg agctccagca gcagctccct ggagagctcg ccagtgcgt tggacagaag   1020

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ccgggccagc accgggagct cagattcttc ccctggtggc catgggaccc aggtcaatgt   1140

cacctgcatc gtgaacgtct gtagcagctc tgaccacagc tcacagtgct cctcccaagc   1200

cagctccaca atgggagaca cagattccag cccctcggag tccccgaagg acgagcaggt   1260

ccccttctcc aaggaggaat gtgcctttcg gtcacagctg gagacgccag agaccctgct   1320

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<210> 7
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<212> PRT

<213> Homo sapiens

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Met Ala Ala Gly Gln Asn Gly His Glu Glu Trp Val Gly Ser Ala Tyr
            20              25              30

Leu Phe Val Glu Ser Ser Leu Asp Lys Val Val Leu Ser Asp Ala Tyr
        35              40              45

Ala His Pro Gln Gln Lys Val Ala Val Tyr Arg Ala Leu Gln Ala Ala
    50              55              60

Leu Ala Glu Ser Gly Gly Ser Pro Asp Val Leu Gln Met Leu Lys Ile
65              70              75              80

His Arg Ser Asp Pro Gln Leu Ile Val Gln Leu Arg Phe Cys Gly Arg
            85              90              95

Gln Pro Cys Gly Arg Phe Leu Arg Ala Tyr Arg Glu Gly Ala Leu Arg
            100             105             110

Ala Ala Leu Gln Arg Ser Leu Ala Ala Ala Leu Ala Gln His Ser Val
        115             120             125

Pro Leu Gln Leu Glu Leu Arg Ala Gly Ala Glu Arg Leu Asp Ala Leu
    130             135             140

Leu Ala Asp Glu Glu Arg Cys Leu Ser Cys Ile Leu Ala Gln Gln Pro
145             150             155             160

Asp Arg Leu Arg Asp Glu Glu Leu Ala Glu Leu Glu Asp Ala Leu Arg
            165             170             175

Asn Leu Lys Cys Gly Ser Gly Ala Arg Gly Gly Asp Gly Glu Val Ala
            180             185             190

Ser Ala Pro Leu Gln Pro Pro Val Pro Ser Leu Ser Glu Val Lys Pro
        195             200             205

Pro Pro Pro Pro Pro Pro Ala Gln Thr Phe Leu Phe Gln Gly Gln Pro
    210             215             220
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```
Val Val Asn Arg Pro Leu Ser Leu Lys Asp Gln Gln Thr Phe Ala Arg
225             230         235             240


Ser Val Gly Leu Lys Trp Arg Lys Val Gly Arg Ser Leu Gln Arg Gly
            245             250             255


Cys Arg Ala Leu Arg Asp Pro Ala Leu Asp Ser Leu Ala Tyr Glu Tyr
            260             265             270


Glu Arg Glu Gly Leu Tyr Glu Gln Ala Phe Gln Leu Leu Arg Arg Phe
        275             280             285


Val Gln Ala Glu Gly Arg Arg Ala Thr Leu Gln Arg Leu Val Glu Ala
    290             295             300


Leu Glu Glu Asn Glu Leu Thr Ser Leu Ala Glu Asp Leu Leu Gly Leu
305             310             315             320


Thr Asp Pro Asn Gly Gly Leu Ala
            325
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<211>  987
<212>  DNA
<213>  Homo sapiens

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ctgcaggctg ccttggcaga gagcggcggg agcccggacg tgctgcagat gctgaagatc  240

caccgcagcg acccgcagct gatcgtgcag ctgcgattct gcgggcggca gccctgtggc  300

cgcttcctcc gcgcctaccg cgaggggggg ctgcgcgccg cgctgcagag gagcctggcg  360

gccgcgctcg cccagcactc ggtgccgctg caactggagc tgcgcgccgg cgccgagcgg  420

ctggacgctt tgctggcgga cgaggagcgc tgtttgagtt gcatcctagc ccagcagccc  480

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ccctctctgt cggaggtgaa gccgccgccg ccgccgccac ctgcccagac ttttctgttc  660

cagggtcagc ctgtagtgaa tcggccgctg agcctgaagg accaacagac gttcgcgcgc  720

tctgtgggtc tcaaatggcg caaggtgggg cgctcactgc agcgaggctg ccgggcgctg  780
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accgatccca atggcggcct ggcctag   987

<210> 9
<211> 501
<212> PRT
<213> Homo sapiens

<400> 9

Met Ala Ala Ala Ser Val Thr Ser Pro Gly Ser Leu Glu Leu Leu Gln
1   5   10   15

Pro Gly Phe Ser Lys Thr Leu Leu Gly Thr Arg Leu Glu Ala Lys Tyr
            20   25   30

Leu Cys Ser Ala Cys Lys Asn Ile Leu Arg Arg Pro Phe Gln Ala Gln
        35   40   45

Cys Gly His Arg Tyr Cys Ser Phe Cys Leu Thr Ser Ile Leu Ser Ser
    50   55   60

Gly Pro Gln Asn Cys Ala Ala Cys Val Tyr Glu Gly Leu Tyr Glu Glu
65   70   75   80

Gly Ile Ser Ile Leu Glu Ser Ser Ser Ala Phe Pro Asp Asn Ala Ala
                85   90   95

Arg Arg Glu Val Glu Ser Leu Pro Ala Val Cys Pro Asn Asp Gly Cys
                100   105   110

Thr Trp Lys Gly Thr Leu Lys Glu Tyr Glu Ser Cys His Glu Gly Leu
            115   120   125

Cys Pro Phe Leu Leu Thr Glu Cys Pro Ala Cys Lys Gly Leu Val Arg
        130   135   140

Leu Ser Glu Lys Glu His His Thr Glu Gln Glu Cys Pro Lys Arg Ser
145   150   155   160

Leu Ser Cys Gln His Cys Arg Ala Pro Cys Ser His Val Asp Leu Glu
                165   170   175

```
Val His Tyr Glu Val Cys Pro Lys Phe Pro Leu Thr Cys Asp Gly Cys
            180             185             190

Gly Lys Lys Lys Ile Pro Arg Glu Thr Phe Gln Asp His Val Arg Ala
            195             200             205

Cys Ser Lys Cys Arg Val Leu Cys Arg Phe His Thr Val Gly Cys Ser
    210             215             220

Glu Met Val Glu Thr Glu Asn Leu Gln Asp His Glu Leu Gln Arg Leu
225             230             235             240

Arg Glu His Leu Ala Leu Leu Leu Ser Ser Phe Leu Glu Ala Gln Ala
            245             250             255

Ser Pro Gly Thr Leu Asn Gln Val Gly Pro Glu Leu Leu Gln Arg Cys
            260             265             270

Gln Ile Leu Glu Gln Lys Ile Ala Thr Phe Glu Asn Ile Val Cys Val
            275             280             285

Leu Asn Arg Glu Val Glu Arg Val Ala Val Thr Ala Glu Ala Cys Ser
            290             295             300

Arg Gln His Arg Leu Asp Gln Asp Lys Ile Glu Ala Leu Ser Asn Lys
305             310             315             320

Val Gln Gln Leu Glu Arg Ser Ile Gly Leu Lys Asp Leu Ala Met Ala
            325             330             335

Asp Leu Glu Gln Lys Val Ser Glu Leu Glu Val Ser Thr Tyr Asp Gly
            340             345             350

Val Phe Ile Trp Lys Ile Ser Asp Phe Thr Arg Lys Arg Gln Glu Ala
            355             360             365

Val Ala Gly Arg Thr Pro Ala Ile Phe Ser Pro Ala Phe Tyr Thr Ser
    370             375             380

Arg Tyr Gly Tyr Lys Met Cys Leu Arg Val Tyr Leu Asn Gly Asp Gly
385             390             395             400

Thr Gly Arg Gly Thr His Leu Ser Leu Phe Phe Val Val Met Lys Gly
            405             410             415
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Pro Asn Asp Ala Leu Leu Gln Trp Pro Phe Asn Gln Lys Val Thr Leu
        420                 425                 430

Met Leu Leu Asp His Asn Asn Arg Glu His Val Ile Asp Ala Phe Arg
        435                 440                 445

Pro Asp Val Thr Ser Ser Ser Phe Gln Arg Pro Val Ser Asp Met Asn
        450                 455                 460

Ile Ala Ser Gly Cys Pro Leu Phe Cys Pro Val Ser Lys Met Glu Ala
465                 470                 475                 480

Lys Asn Ser Tyr Val Arg Asp Asp Ala Ile Phe Ile Lys Ala Ile Val
                485                 490                 495

Asp Leu Thr Gly Leu
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<210> 10
<211> 1573
<212> DNA
<213> Homo sapiens

<400> 10

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ctccgcaggc ccttccaggc gcagtgtggc accggtact gctccttctg cctggccagc    180

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cccgggagaa gtttcaggac cacgtcaaga cttgtggcaa gtgtcgagtc ccttgcagat   720

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gggagaccag agccacgcgg ggtcagagct cctgcagagg tgcgagagcc tggagaagaa   900
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tagcaaggtg cagcagctgg agaggagcat tggcctcaag gacctggcga tggctgactt     1080

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<210>  11
<211>  908
<212>  PRT
<213>  Homo sapiens

<400>  11

Met Glu Glu Gly Gly Arg Asp Lys Ala Pro Val Gln Pro Gln Gln Ser
1               5                   10                  15


Pro Ala Ala Ala Pro Gly Gly Thr Asp Glu Lys Pro Ser Gly Lys Glu
                20                  25                  30


Arg Arg Asp Ala Gly Asp Lys Asp Lys Glu Gln Glu Leu Ser Glu Glu
                35                  40                  45


Asp Lys Gln Leu Gln Asp Glu Leu Glu Met Leu Val Glu Arg Leu Gly
    50                  55                  60


Glu Lys Asp Thr Ser Leu Tyr Arg Pro Ala Leu Glu Glu Leu Arg Arg
65                  70                  75                  80


Gln Ile Arg Ser Ser Thr Thr Ser Met Thr Ser Val Pro Lys Pro Leu
                85                  90                  95


Lys Phe Leu Arg Pro His Tyr Gly Lys Leu Lys Glu Ile Tyr Glu Asn
                100                 105                 110
```

Met Ala Pro Gly Glu Asn Lys Arg Phe Ala Ala Asp Ile Ile Ser Val
     115   120   125

Leu Ala Met Thr Met Ser Gly Glu Arg Glu Cys Leu Lys Tyr Arg Leu
     130   135   140

Val Gly Ser Gln Glu Glu Leu Ala Ser Trp Gly His Glu Tyr Val Arg
145   150   155   160

His Leu Ala Gly Glu Val Ala Lys Glu Trp Gln Glu Leu Asp Asp Ala
          165   170   175

Glu Lys Val Gln Arg Glu Pro Leu Leu Thr Leu Val Lys Glu Ile Val
          180   185   190

Pro Tyr Asn Met Ala His Asn Ala Glu His Glu Ala Cys Asp Leu Leu
          195   200   205

Met Glu Ile Glu Gln Val Asp Met Leu Glu Lys Asp Ile Asp Glu Asn
     210   215   220

Ala Tyr Ala Lys Val Cys Leu Tyr Leu Thr Ser Cys Val Asn Tyr Val
225   230   235   240

Pro Glu Pro Glu Asn Ser Ala Leu Leu Arg Cys Ala Leu Gly Val Phe
          245   250   255

Arg Lys Phe Ser Arg Phe Pro Glu Ala Leu Arg Leu Ala Leu Met Leu
          260   265   270

Asn Asp Met Glu Leu Val Glu Asp Ile Phe Thr Ser Cys Lys Asp Val
          275   280   285

Val Val Gln Lys Gln Met Ala Phe Met Leu Gly Arg His Gly Val Phe
     290   295   300

Leu Glu Leu Ser Glu Asp Val Glu Glu Tyr Glu Asp Leu Thr Glu Ile
305   310   315   320

Met Ser Asn Val Gln Leu Asn Ser Asn Phe Leu Ala Leu Ala Arg Glu
          325   330   335

Leu Asp Ile Met Glu Pro Lys Val Pro Asp Asp Ile Tyr Lys Thr His
          340   345   350

Leu Glu Asn Asn Arg Phe Gly Gly Ser Gly Ser Gln Val Asp Ser Ala
        355   360   365

Arg Met Asn Leu Ala Ser Ser Phe Val Asn Gly Phe Val Asn Ala Ala
        370   375   380

Phe Gly Gln Asp Lys Leu Leu Thr Asp Asp Gly Asn Lys Trp Leu Tyr
385   390   395   400

Lys Asn Lys Asp His Gly Met Leu Ser Ala Ala Ala Ser Leu Gly Met
            405   410   415

Ile Leu Leu Trp Asp Val Asp Gly Gly Leu Thr Gln Ile Asp Lys Tyr
            420   425   430

Leu Tyr Ser Ser Glu Asp Tyr Ile Lys Ser Gly Ala Leu Leu Ala Cys
        435   440   445

Gly Ile Val Asn Ser Gly Val Arg Asn Glu Cys Asp Pro Ala Leu Ala
    450   455   460

Leu Leu Ser Asp Tyr Val Leu His Asn Ser Asn Thr Met Arg Leu Gly
465   470   475   480

Ser Ile Phe Gly Leu Gly Leu Ala Tyr Ala Gly Ser Asn Arg Glu Asp
            485   490   495

Val Leu Thr Leu Leu Leu Pro Val Met Gly Asp Ser Lys Ser Ser Met
        500   505   510

Glu Val Ala Gly Val Thr Ala Leu Ala Cys Gly Met Ile Ala Val Gly
        515   520   525

Ser Cys Asn Gly Asp Val Thr Ser Thr Ile Leu Gln Thr Ile Met Glu
    530   535   540

Lys Ser Glu Thr Glu Leu Lys Asp Thr Tyr Ala Arg Trp Leu Pro Leu
545   550   555   560

Gly Leu Gly Leu Asn His Leu Gly Lys Gly Glu Ala Ile Glu Ala Ile
            565   570   575

Leu Ala Ala Leu Glu Val Val Ser Glu Pro Phe Arg Ser Phe Ala Asn
        580   585   590

```
Thr Leu Val Asp Val Cys Ala Tyr Ala Gly Ser Gly Asn Val Leu Lys
        595             600             605

Val Gln Gln Leu Leu His Ile Cys Ser Glu His Phe Asp Ser Lys Glu
    610             615             620

Lys Glu Glu Asp Lys Asp Lys Lys Glu Lys Lys Asp Lys Asp Lys Lys
625             630             635             640

Glu Ala Pro Ala Asp Met Gly Ala His Gln Gly Val Ala Val Leu Gly
                645             650             655

Ile Ala Leu Ile Ala Met Gly Glu Glu Ile Gly Ala Glu Met Ala Leu
            660             665             670

Arg Thr Phe Gly His Leu Leu Arg Tyr Gly Glu Pro Thr Leu Arg Arg
        675             680             685

Ala Val Pro Leu Ala Leu Ala Leu Ile Ser Val Ser Asn Pro Arg Leu
    690             695             700

Asn Ile Leu Asp Thr Leu Ser Lys Phe Ser His Asp Ala Asp Pro Glu
705             710             715             720

Val Ser Tyr Asn Ser Ile Phe Ala Met Gly Met Val Gly Ser Gly Thr
            725             730             735

Asn Asn Ala Arg Leu Ala Ala Met Leu Arg Gln Leu Ala Gln Tyr His
            740             745             750

Ala Lys Asp Pro Asn Asn Leu Phe Met Val Arg Leu Ala Gln Gly Leu
        755             760             765

Thr His Leu Gly Lys Gly Thr Leu Thr Leu Cys Pro Tyr His Ser Asp
    770             775             780

Arg Gln Leu Met Ser Gln Val Ala Val Ala Gly Leu Leu Thr Val Leu
785             790             795             800

Val Ser Phe Leu Asp Val Arg Asn Ile Ile Leu Gly Lys Ser His Tyr
            805             810             815

Val Leu Tyr Gly Leu Val Ala Ala Met Gln Pro Arg Met Leu Val Thr
        820             825             830
```

```
Phe Asp Glu Glu Leu Arg Pro Leu Pro Val Ser Val Arg Val Gly Gln
    835             840         845

Ala Val Asp Val Val Gly Gln Ala Gly Lys Pro Lys Thr Ile Thr Gly
    850             855         860.

Phe Gln Thr His Thr Thr Pro Val Leu Leu Ala His Gly Glu Arg Ala
865             870             875             880

Glu Leu Ala Thr Glu Glu Phe Leu Pro Val Thr Pro Ile Leu Glu Gly
            885             890         895

Phe Val Ile Leu Arg Lys Asn Pro Asn Tyr Asp Leu
            900             905
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<210>  12
<211>  2727
<212>  DNA
<213>  Homo sapiens

<400>  12
atggaggagg gaggccggga caaggcgccg gtgcagcccc agcagtctcc agcggcggcc    60

cccggcggca cggacgagaa gccgagcggc aaggagcggc gggatgccgg ggacaaggac   120

aaagaacagg agctgtctga agaggataaa cagcttcaag atgaactgga gatgctcgtg   180

gaacgactag gggagaagga tacatccctg tatcgaccag cgctggagga attgcgaagg   240

cagattcgtt cttctacaac ttccatgact tcagtgccca gcctctcaa atttctgcgt    300

ccacactatg gcaaactgaa ggaaatctat gagaacatgg cccctgggga gaataagcgt   360

tttgctgctg acatcatctc cgttttggcc atgaccatga gtggggagcg tgagtgcctc   420

aagtatcggc tagtgggctc ccaggaggaa ttggcatcat ggggtcatga gtatgtcagg   480

catctggcag gagaagtggc taaggagtgg caggagctgg atgacgcaga gaaggtccag   540

cgggagcctc tgctcactct ggtgaaggaa atcgtcccct ataacatggc ccacaatgca   600

gagcatgagg cttgcgacct gcttatggaa attgagcagg tggacatgct ggagaaggac   660

attgatgaaa atgcatatgc aaaggtctgc ctttatctca ccagttgtgt gaattacgtg   720

cctgagcctg agaactcagc cctactgcgt gtgcccctgg gtgtgttccg aaagtttagc   780

cgcttccctg aagctctgag attggcattg atgctcaatg acatggagtt ggtagaagac   840

atcttcacct cctgcaagga tgtggtagta cagaaacaga tggcattcat gctaggccgg   900

catggggtgt cctggagct gagtgaagat gtcgaggagt atgaggacct gacagagatc   960

atgtccaatg tacagctcaa cagcaacttc ttggccttag ctcgggagct ggacatcatg  1020
```

```
gagcccaagg tgcctgatga catctacaaa acccacctag agaacaacag gtttgggggc   1080

agtggctctc aggtggactc tgcccgcatg aacctggcct cctcttttgt gaatggcttt   1140

gtgaatgcag cttttggcca agacaagctg ctaacagatg atggcaacaa atggctttac   1200

aagaacaagg accacggaat gttgagtgca gctgcatctc ttgggatgat tctgctgtgg   1260

gatgtggatg gtggcctcac ccagattgac aagtacctgt actcctctga ggactacatt   1320

aagtcaggag ctcttcttgc ctgtggcata gtgaactctg gggtccggaa tgagtgtgac   1380

cctgctctgg cactgctctc agactatgtt ctccacaaca gcaacaccat gagacttggt   1440

tccatctttg ggctaggctt ggcttatgct ggctcaaatc gtgaagatgt cctaacactg   1500

ctgctgcctg tgatgggaga ttcaaagtcc agcatggagg tggcaggtgt cacagcttta   1560

gcctgtggaa tgatagcagt agggtcctgc aatggagatg taacttccac tatccttcag   1620

accatcatgg agaagtcaga gactgagctc aaggatactt atgctcgttg gcttcctctt   1680

ggactgggtc tcaaccacct ggggaagggt gaggccatcg aggcaatcct ggctgcactg   1740

gaggttgtgt cagagccatt ccgcagtttt gccaacacac tggtggatgt gtgtgcatat   1800

gcaggctctg ggaatgtgct gaaggtgcag cagctgctcc acatttgtag cgaacacttt   1860

gactccaaag agaaggagga agacaaagac aagaaggaaa agaaagacaa ggacaagaag   1920

gaagcccctg ctgacatggg agcacatcag ggagtggctg ttctggggat tgcccttatt   1980

gctatggggg aggagattgg tgcagagatg gcattacgaa cctttggcca cttgctgaga   2040

tatggggagc ctacactccg gagggctgta cctttagcac tggccctcat ctctgtttca   2100

aatccacgac tcaacatcct ggatacccta agcaaattct ctcatgatgc tgatccagaa   2160

gtttcctata actccatttt tgccatgggc atggtgggca gtggtaccaa taatgcccgt   2220

ctggctgcaa tgctgcgcca gttagctcaa tatcatgcca aggacccaaa caacctcttc   2280

atggtgcgct tggcacaggg cctgacacat ttagggaagg gcacccttac cctctgcccc   2340

taccacagcg accggcagct tatgagccag gtggccgtgg ctggactgct cactgtgctt   2400

gtctctttcc tggatgttcg aaacattatt ctaggcaaat cacactatgt attgtatggg   2460

ctggtggctg ccatgcagcc ccgaatgctg gttacgtttg atgaggagct gcggccattg   2520

ccagtgtctg tccgtgtggg ccaggcagtg gatgtggtgg ccaggctgg caagccgaag    2580

actatcacag ggttccagac gcatacaacc ccagtgttgt tggcccacgg ggaacgggca   2640

gaattggcca ctgaggagtt tcttcctgtt accccccattc tggaaggttt tgttatcctt   2700

cggaagaacc ccaattatga tctctaa                                        2727
```

<210> 13
<211> 729
<212> PRT
<213> Homo sapiens

<400> 13

```
Met Gln Ser Thr Ser Asn His Leu Trp Leu Leu Ser Asp Ile Leu Gly
1               5                   10                  15

Gln Gly Ala Thr Ala Asn Val Phe Arg Gly Arg His Lys Lys Thr Gly
                20              25                  30

Asp Leu Phe Ala Ile Lys Val Phe Asn Asn Ile Ser Phe Leu Arg Pro
            35              40              45

Val Asp Val Gln Met Arg Glu Phe Glu Val Leu Lys Lys Leu Asn His
        50              55              60

Lys Asn Ile Val Lys Leu Phe Ala Ile Glu Glu Glu Thr Thr Thr Arg
65                  70              75                  80

His Lys Val Leu Ile Met Glu Phe Cys Pro Cys Gly Ser Leu Tyr Thr
                85              90                  95

Val Leu Glu Glu Pro Ser Asn Ala Tyr Gly Leu Pro Glu Ser Glu Phe
            100             105             110

Leu Ile Val Leu Arg Asp Val Val Gly Gly Met Asn His Leu Arg Glu
        115             120             125

Asn Gly Ile Val His Arg Asp Ile Lys Pro Gly Asn Ile Met Arg Val
    130             135             140

Ile Gly Glu Asp Gly Gln Ser Val Tyr Lys Leu Thr Asp Phe Gly Ala
145             150             155             160

Ala Arg Glu Leu Glu Asp Asp Glu Gln Phe Val Ser Leu Tyr Gly Thr
                165             170             175

Glu Glu Tyr Leu His Pro Asp Met Tyr Glu Arg Ala Val Leu Arg Lys
            180             185             190

Asp His Gln Lys Lys Tyr Gly Ala Thr Val Asp Leu Trp Ser Ile Gly
            195             200             205
```

Val Thr Phe Tyr His Ala Ala Thr Gly Ser Leu Pro Phe Arg Pro Phe
210   215   220

Glu Gly Pro Arg Arg Asn Lys Glu Val Met Tyr Lys Ile Ile Thr Gly
225   230   235   240

Lys Pro Ser Gly Ala Ile Ser Gly Val Gln Lys Ala Glu Asn Gly Pro
245   250   255

Ile Asp Trp Ser Gly Asp Met Pro Val Ser Cys Ser Leu Ser Arg Gly
260   265   270

Leu Gln Val Leu Leu Thr Pro Val Leu Ala Asn Ile Leu Glu Ala Asp
275   280   285

Gln Glu Lys Cys Trp Gly Phe Asp Gln Phe Phe Ala Glu Thr Ser Asp
290   295   300

Ile Leu His Arg Met Val Ile His Val Phe Ser Leu Gln Gln Met Thr
305   310   315   320

Ala His Lys Ile Tyr Ile His Ser Tyr Asn Thr Ala Thr Ile Phe His
325   330   335

Glu Leu Val Tyr Lys Gln Thr Lys Ile Ile Ser Ser Asn Gln Glu Leu
340   345   350

Ile Tyr Glu Gly Arg Arg Leu Val Leu Glu Pro Gly Arg Leu·Ala Gln
355   360   365

His Phe Pro Lys Thr Thr Glu Glu Asn Pro Ile Phe Val Val Ser Arg
370   375   380

Glu Pro Leu Asp Thr Ile Gly Leu Ile Tyr Glu Lys Ile Ser Leu Pro
385   390   395   400

Lys Val His Pro Arg Tyr Asp Leu Asp Gly Asp Ala Ser Met Ala Lys
405   410   415

Ala Ile Thr Gly Val Val Cys Tyr Ala Cys Arg Ile Ala Ser Thr Leu
420   425   430

Leu Leu Tyr Gln Glu Leu Met Arg Lys Gly Ile Arg Trp Leu Ile Glu
435   440   445

Leu Ile Lys Asp Asp Tyr Asn Glu Thr Val His Lys Lys Thr Glu Val
    450   455   460

Val Ile Thr Leu Asp Phe Cys Ile Arg Asn Ile Glu Lys Thr Val Lys
465   470   475   480

Val Tyr Glu Lys Leu Met Lys Ile Asn Leu Glu Ala Ala Glu Leu Gly
            485   490   495

Glu Ile Ser Asp Ile His Thr Lys Leu Leu Arg Leu Ser Ser Ser Gln
            500   505   510

Gly Thr Ile Glu Thr Ser Leu Gln Asp Ile Asp Ser Arg Leu Ser Pro
        515   520   525

Gly Gly Ser Leu Ala Asp Ala Trp Ala His Gln Glu Gly Thr His Pro
    530   535   540

Lys Asp Arg Asn Val Glu Lys Leu Gln Val Leu Leu Asn Cys Met Thr
545   550   555   560

Glu Ile Tyr Tyr Gln Phe Lys Lys Asp Gln Ala Glu Arg Arg Leu Ala
            565   570   575

Tyr Asn Glu Glu Gln Ile His Lys Phe Asp Lys Gln Lys Leu Tyr Tyr
        580   585   590

His Ala Thr Lys Ala Met Thr His Phe Thr Asp Glu Cys Val Lys Lys
        595   600   605

Tyr Glu Ala Phe Leu Asn Lys Ser Glu Glu Trp Ile Arg Lys Met Leu
    610   615   620

His Leu Arg Lys Gln Leu Leu Ser Leu Thr Asn Gln Cys Phe Asp Ile
625   630   635   640

Glu Glu Glu Val Ser Lys Tyr Gln Glu Tyr Thr Asn Glu Leu Gln Glu
            645   650   655

Thr Leu Pro Gln Lys Met Phe Thr Ala Ser Ser Gly Ile Lys His Thr
        660   665   670

Met Thr Pro Ile Tyr Pro Ser Ser Asn Thr Leu Val Glu Met Thr Leu
        675   680   685

```
Gly Met Lys Lys Leu Lys Glu Glu Met Glu Gly Val Val Lys Glu Leu
    690               695           700

Ala Glu Asn Asn His Ile Leu Glu Arg Phe Gly Ser Leu Thr Met Asp
705               710           715               720

Gly Gly Leu Arg Asn Val Asp Cys Leu
              725
```

```
<210>  14
<211>  2190
<212>  DNA
<213>  Homo sapiens

<400>  14
atgcagagca cttctaatca tctgtggctt ttatctgata ttttaggcca aggagctact      60

gcaaatgtct ttcgtggaag acataagaaa actggtgatt tatttgctat caaagtattt     120

aataacataa gcttccttcg tccagtggat gttcaaatga gagaatttga agtgttgaaa     180

aaactcaatc acaaaaatat tgtcaaatta tttgctattg aagaggagac aacaacaaga     240

cataaagtac ttattatgga attttgtcca tgtgggagtt tatacactgt tttagaagaa     300

ccttctaatg cctatggact accagaatct gaattcttaa ttgttttgcg agatgtggtg     360

ggtggaatga atcatctacg agagaatggt atagtgcacc gtgatatcaa gccaggaaat     420

atcatgcgtg ttatagggga agatggacag tctgtgtaca aactcacaga ttttggtgca     480

gctagagaat tagaagatga tgagcagttt gtttctctgt atggcacaga agaatatttg     540

caccctgata tgtatgagag agcagtgcta agaaaagatc atcagaagaa atatggagca     600

acagttgatc tttggagcat ggggtaaca ttttaccatg cagctactgg atcactgcca     660

tttagaccct ttgaagggcc tcgtaggaat aaagaagtga tgtataaaat aattacagga     720

aagccttctg gtgcaatatc tggagtacag aaagcagaaa atggaccaat tgactggagt     780

ggagacatgc ctgtttcttg cagtctttct cggggtcttc aggttctact taccctgtt     840

cttgcaaaca tccttgaagc agatcaggaa aagtgttggg gttttgacca gttttttgca     900

gaaactagtg atatacttca ccgaatggta attcatgttt tttcgctaca caaatgaca      960

gctcataaga tttatataca tagctataat actgctacta tatttcatga actggtatat    1020

aaacaaacca aaattatttc ttcaaatcaa gaacttatct acgaagggcg acgcttagtc    1080

ttagaacctg gaaggctggc acaacatttc cctaaaacta ctgaggaaaa ccctatattt    1140

gtagtaagcc gggaacctct ggataccata ggattaatat atgaaaaaat ttccctccct    1200

aaagtacatc cacgttatga tttagacggg gatgctagca tggctaaggc aataacaggg    1260
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gttgtgtgtt atgcctgcag aattgccagt accttactgc tttatcagga attaatgcga    1320

aaggggatac gatggctgat tgaattaatt aaagatgatt acaatgaaac tgttcacaaa    1380

aagacagaag ttgtgatcac attggatttc tgtatcagaa acattgaaaa aactgtgaaa    1440

gtatatgaaa agttgatgaa gatcaacctg gaagcggcag agttaggtga aatttcagac    1500

atacacacca aattgttgag actttccagt tctcagggaa caatagaaac cagtcttcag    1560

gatatcgaca gcagattatc tccaggtgga tcactggcag acgcatgggc acatcaagaa    1620

ggcactcatc cgaaagacag aaatgtagaa aaactacaag tcctgttaaa ttgcatgaca    1680

gagatttact atcagttcaa aaaagaccaa gcagaacgta gattagctta taatgaagaa    1740

caaatccaca aatttgataa gcaaaaactg tattaccatg ccacaaaagc tatgacgcac    1800

tttacagatg aatgtgttaa aaagtatgag gcattttttga ataagtcaga agaatggata    1860

agaaagatgc ttcatcttag gaaacagtta ttatcgctga ctaatcagtg ttttgatatt    1920

gaagaagaag tatcaaaata tcaagaatat actaatgagt tacaagaaac tctgcctcag    1980

aaaatgttta cagcttccag tggaatcaaa cataccatga ccccaatttta tccaagttct    2040

aacacattag tagaaatgac tcttggtatg aagaaattaa aggaagagat ggaaggggtg    2100

gttaaagaac ttgctgaaaa taaccacatt ttagaaaggt ttggctcttt aaccatggat    2160

ggtggccttc gcaacgttga ctgtctttag                                       2190
```

```
<210>  15
<211>  834
<212>  PRT
<213>  Homo sapiens

<400>  15

Met Ala Val Glu Asp Glu Gly Leu Arg Val Phe Gln Ser Val Lys Ile
1               5                   10                  15


Lys Ile Gly Glu Ala Lys Asn Leu Pro Ser Tyr Pro Gly Pro Ser Lys
            20                  25                  30


Met Arg Asp Cys Tyr Cys Thr Val Asn Leu Asp Gln Glu Glu Val Phe
            35                  40                  45


Arg Thr Lys Ile Val Glu Lys Ser Leu Cys Pro Phe Tyr Gly Glu Asp
    50                  55                  60


Phe Tyr Cys Glu Ile Pro Arg Ser Phe Arg His Leu Ser Phe Tyr Ile
65                  70                  75                  80
```

Phe Asp Arg Asp Val Phe Arg Arg Asp Ser Ile Ile Gly Lys Val Ala
                85   90   95

Ile Gln Lys Glu Asp Leu Gln Lys Tyr His Asn Arg Asp Thr Trp Phe
            100   105   110

Gln Leu Gln His Val Asp Ala Asp Ser Glu Val Gln Gly Lys Val His
            115   120   125

Leu Glu Leu Arg Leu Ser Glu Val Ile Thr Asp Thr Gly Val Val Cys
    130   135   140

His Lys Leu Ala Thr Arg Ile Val Glu Cys Gln Gly Leu Pro Ile Val
145   150   155   160

Asn Gly Gln Cys Asp Pro Tyr Ala Thr Val Thr Leu Ala Gly Pro Phe
            165   170   175

Arg Ser Glu Ala Lys Lys Thr Lys Val Lys Arg Lys Thr Asn Asn Pro
            180   185   190

Gln Phe Asp Glu Val Phe Tyr Phe Glu Val Thr Arg Pro Cys Ser Tyr
            195   200   205

Ser Lys Lys Ser His Phe Asp Phe Glu Glu Glu Asp Val Asp Lys Leu
    210   215   220

Glu Ile Arg Val Asp Leu Trp Asn Ala Ser Asn Leu Lys Phe Gly Asp
225   230   235   240

Glu Phe Leu Gly Glu Leu Arg Ile Pro Leu Lys Val Leu Arg Gln Ser
            245   250   255

Ser Ser Tyr Glu Ala Trp Tyr Phe Leu Gln Pro Arg Asp Asn Gly Ser
            260   265   270

Lys Ser Leu Lys Pro Asp Asp Leu Gly Ser Leu Arg Leu Asn Val Val
            275   280   285

Tyr Thr Glu Asp His Val Phe Ser Ser Asp Tyr Tyr Ser Pro Leu Arg
    290   295   300

Asp Leu Leu Leu Lys Ser Ala Asp Val Glu Pro Val Ser Ala Ser Ala
305   310   315   320

Ala His Ile Leu Gly Glu Val Cys Arg Glu Lys Gln Glu Ala Ala Val
                325   330   335

Pro Leu Val Arg Leu Phe Leu His Tyr Gly Arg Val Val Pro Phe Ile
            340   345   350

Ser Ala Ile Ala Ser Ala Glu Val Lys Arg Thr Gln Asp Pro Asn Thr
            355   360   365

Ile Phe Arg Gly Asn Ser Leu Ala Ser Lys Cys Ile Asp Glu Thr Met
    370   375   380

Lys Leu Ala Gly Met His Tyr Leu His Val Thr Leu Lys Pro Ala Ile
385   390   395   400

Glu Glu Ile Cys Gln Ser His Lys Pro Cys Glu Ile Asp Pro Val Lys
            405   410   415

Leu Lys Asp Gly Glu Asn Leu Glu Asn Asn Met Glu Asn Leu Arg Gln
            420   425   430

Tyr Val Asp Arg Val Phe His Ala Ile Thr Glu Ser Gly Val Ser Cys
            435   440   445

Pro Thr Val Met Cys Asp Ile Phe Phe Ser Leu Arg Glu Ala Ala Ala
    450   455   460

Lys Arg Phe Gln Asp Asp Pro Asp Val Arg Tyr Thr Ala Val Ser Ser
465   470   475   480

Phe Ile Phe Leu Arg Phe Phe Ala Pro Ala Ile Leu Ser Pro Asn Leu
            485   490   495

Phe Gln Leu Thr Pro His His Thr Asp Pro Gln Thr Ser Arg Thr Leu
            500   505   510

Thr Leu Ile Ser Lys Thr Val Gln Thr Leu Gly Ser Leu Ser Lys Ser
            515   520   525

Lys Ser Ala Ser Phe Lys Glu Ser Tyr Met Ala Thr Phe Tyr Glu Phe
    530   535   540

Phe Asn Glu Gln Lys Tyr Ala Asp Ala Val Lys Asn Phe Leu Asp Leu
545   550   555   560

Ile Ser Ser Ser Gly Arg Arg Asp Pro Lys Ser Val Glu Gln Pro Ile
                565   570   575

Val Leu Lys Glu Gly Phe Met Ile Lys Arg Ala Gln Gly Arg Lys Arg
            580   585   590

Phe Gly Met Lys Asn Phe Lys Lys Arg Trp Phe Arg Leu Thr Asn His
        595   600   605

Glu Phe Thr Tyr His Lys Ser Lys Gly Asp Gln Pro Leu Tyr Ser Ile
    610   615   620

Pro Ile Glu Asn Ile Leu Ala Val Glu Lys Leu Glu Glu Glu Ser Phe
625   630   635   640

Lys Met Lys Asn Met Phe Gln Val Ile Gln Pro Glu Arg Ala Leu Tyr
            645   650   655

Ile Gln Ala Asn Asn Cys Val Glu Ala Lys Asp Trp Ile Asp Ile Leu
        660   665   670

Thr Lys Val Ser Gln Cys Asn Gln Lys Arg Leu Thr Val Tyr His Pro
        675   680   685

Ser Ala Tyr Leu Ser Gly His Trp Leu Cys Cys Arg Ala Pro Ser Asp
    690   695   700

Ser Ala Pro Gly Cys Ser Pro Cys Thr Gly Gly Leu Pro Ala Asn Ile
705   710   715   720

Gln Leu Asp Ile Asp Gly Asp Arg Glu Thr Glu Arg Ile Tyr Ser Leu
            725   730   735

Phe Asn Leu Tyr Met Ser Lys Leu Glu Lys Met Gln Glu Ala Cys Gly
            740   745   750

Ser Lys Ser Val Tyr Asp Gly Pro Glu Gln Glu Glu Tyr Ser Thr Phe
        755   760   765

Val Ile Asp Asp Pro Gln Glu Thr Tyr Lys Thr Leu Lys Gln Val Ile
    770   775   780

Ala Gly Val Gly Ala Leu Glu Gln Glu His Ala Gln Tyr Lys Arg Asp
785   790   795   800

```
Lys Phe Lys Lys Thr Lys Tyr Gly Ser Gln Glu His Pro Ile Gly Asp
            805             810             815

Lys Ser Phe Gln Asn Tyr Ile Arg Gln Gln Ser Glu Thr Ser Thr His
            820             825             830

Ser Ile
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```
<210>  16
<211>  2505
<212>  PRT
<213>  Homo sapiens

<400>  16
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Ala Thr Gly Gly Cys Gly Gly Thr Gly Gly Ala Gly Gly Ala Cys Gly
1           5               10              15

Ala Gly Gly Gly Gly Cys Thr Cys Cys Gly Gly Gly Thr Cys Thr Thr
            20              25              30

Cys Cys Ala Gly Ala Gly Cys Gly Thr Gly Ala Ala Gly Ala Thr Cys
        35              40              45

Ala Ala Gly Ala Thr Cys Gly Gly Thr Gly Ala Ala Gly Cys Cys Ala
    50              55              60

Ala Ala Ala Ala Cys Cys Thr Thr Cys Cys Cys Thr Cys Thr Thr Ala
65              70              75              80

Cys Cys Cys Gly Gly Gly Gly Cys Cys Gly Ala Gly Cys Ala Ala Gly
            85              90              95

Ala Thr Gly Ala Gly Gly Gly Ala Thr Thr Gly Cys Thr Ala Cys Thr
            100             105             110

Gly Cys Ala Cys Gly Gly Thr Gly Ala Ala Cys Cys Thr Gly Gly Ala
        115             120             125

Cys Cys Ala Gly Gly Ala Gly Gly Ala Gly Gly Thr Thr Thr Thr Cys
    130             135             140

Ala Gly Gly Ala Cys Cys Ala Ala Ala Ala Thr Thr Gly Thr Gly Gly
145             150             155             160
```

Ala Ala Ala Ala Gly Thr Cys Ala Cys Thr Cys Thr Gly Cys Cys Cys
            165   170   175

Gly Thr Thr Thr Thr Ala Cys Gly Gly Ala Gly Ala Ala Gly Ala Cys
            180   185   190

Thr Thr Thr Thr Ala Cys Thr Gly Thr Gly Ala Ala Ala Thr Thr Cys
            195   200   205

Cys Thr Cys Gly Gly Ala Gly Cys Thr Thr Thr Cys Gly Thr Cys Ala
    210   215   220

Cys Cys Thr Gly Thr Cys Cys Thr Thr Cys Thr Ala Cys Ala Thr Thr
225   230   235   240
    .

Thr Thr Cys Gly Ala Thr Ala Gly Ala Gly Ala Cys Gly Thr Thr Thr
            245   250   255

Thr Cys Cys Gly Gly Ala Gly Gly Gly Ala Thr Thr Cys Cys Ala Thr
            260   265   270

Cys Ala Thr Ala Gly Gly Gly Ala Ala Gly Gly Thr Gly Gly Cys Cys
    275   280   285

Ala Thr Cys Cys Ala Gly Ala Ala Gly Gly Ala Gly Gly Ala Cys Thr
    290   295   300

Thr Gly Cys Ala Gly Ala Ala Gly Thr Ala Cys Cys Ala Cys Ala Ala
305   310   315   320

Cys Ala Gly Gly Gly Ala Cys Ala Cys Cys Thr Gly Gly Thr Thr Cys
        .325   330   335

Cys Ala Gly Cys Thr Gly Cys Ala Gly Cys Ala Cys Gly Thr Gly Gly
            340   345   350

Ala Cys Gly Cys Thr Gly Ala Cys Thr Cys Gly Gly Ala Ala Gly Thr
            355   360   365

Gly Cys Ala Gly Gly Gly Cys Ala Ala Ala Gly Thr Gly Cys Ala Cys
    370   375   380

Cys Thr Gly Gly Ala Gly Cys Thr Gly Cys Gly Gly Cys Thr Gly Ala
385   390   395   400

Gly Cys Gly Ala Gly Gly Thr Cys Ala Thr Cys Ala Cys Ala Gly Ala
            405   410   415

Cys Ala Cys Thr Gly Gly Gly Gly Thr Cys Gly Thr Cys Thr Gly Cys
            420   425   430

Cys Ala Cys Ala Ala Gly Cys Thr Cys Gly Cys Cys Ala Cys Ala Cys
            435   440   445

Gly Cys Ala Thr Cys Gly Thr Cys Gly Ala Gly Thr Gly Cys Cys Ala
    450   455   460

Gly Gly Gly Cys Cys Thr Cys Cys Cys Ala Thr Cys Gly Thr Gly
465   470   475   480

Ala Ala Thr Gly Gly Gly Cys Ala Ala Thr Gly Thr Gly Ala Cys Cys
            485   490   495

Cys Cys Thr Ala Cys Gly Cys Cys Ala Cys Cys Gly Thr Gly Ala Cys
            500   505   510

Gly Cys Thr Gly Gly Cys Ala Gly Gly Ala Cys Cys Cys Thr Thr Cys
            515   520   525

Ala Gly Ala Thr Cys Ala Gly Ala Ala Gly Cys Ala Ala Ala Gly Ala
    530   535   540

Ala Gly Ala Cys Gly Ala Ala Ala Gly Thr Gly Ala Ala Gly Ala Gly
545   550   555   560

Gly Ala Ala Gly Ala Cys Cys Ala Ala Cys Ala Ala Thr Cys Cys Cys
            565   570   575

Cys Ala Gly Thr Thr Cys Gly Ala Thr Gly Ala Ala Gly Thr Gly Thr
            580   585   590

Thr Thr Thr Ala Thr Thr Thr Thr Gly Ala Gly Gly Thr Gly Ala Cys
            595   600   605

Cys Cys Gly Gly Cys Cys Cys Thr Gly Thr Ala Gly Cys Thr Ala Cys
            610   615   620

Ala Gly Cys Ala Ala Gly Ala Ala Gly Thr Cys Cys Cys Ala Cys Thr
625   630   635   640

Thr Thr Gly Ala Cys Thr Thr Thr Gly Ala Gly Gly Ala Gly Gly Ala
            645   650   655

Ala Gly Ala Cys Gly Thr Gly Gly Ala Cys Ala Ala Gly Cys Thr Cys
            660   665   670

Gly Ala Ala Ala Thr Cys Ala Gly Ala Gly Thr Thr Gly Ala Cys Cys
        675   680   685

Thr Cys Thr Gly Gly Ala Ala Thr Gly Cys Cys Ala Gly Thr Ala Ala
    690   695   700

Cys Cys Thr Gly Ala Ala Gly Thr Thr Thr Gly Gly Ala Gly Ala Thr
705   710   715   720

Gly Ala Ala Thr Thr Cys Cys Thr Gly Gly Gly Ala Gly Ala Ala Cys
            725   730   .   735

Thr Ala Ala Gly Gly Ala Thr Cys Cys Cys Gly Thr Thr Gly Ala Ala
            740   745   750

Ala Gly Thr Cys Cys Thr Gly Cys Gly Gly Cys Ala Gly Thr Cys Cys
    755   760   765

Ala Gly Cys Thr Cys Cys Thr Ala Cys Gly Ala Gly Gly Cys Gly Thr
    770   775   780

Gly Gly Thr Ala Cys Thr Thr Cys Cys Thr Cys Cys Ala Gly Cys Cys
785   790   795   800

Cys Cys Gly Gly Gly Ala Cys Ala Ala Thr Gly Gly Thr Ala Gly Cys
            805   810   815

Ala Ala Gly Ala Gly Cys Cys Thr Ala Ala Ala Gly Cys Cys Ala Gly
        820   825   830

Ala Cys Gly Ala Cys Cys Thr Gly Gly Gly Cys Thr Cys Cys Cys Thr
    835   840   845

Gly Cys Gly Gly Cys Thr Gly Ala Ala Cys Gly Thr Gly Gly Thr Ala
    850   855   860

Thr Ala Cys Ala Cys Gly Gly Ala Ala Gly Ala Cys Cys Ala Cys Gly
865   870   875   880

Thr Gly Thr Thr Thr Thr Cys Thr Thr Cys Thr Gly Ala Cys Thr Ala
       885   890   895

Thr Thr Ala Cys Ala Gly Cys Cys Cys Thr Cys Thr Gly Cys Gly Gly
      900   905   910

Gly Ala Cys Cys Thr Gly Cys Thr Gly Thr Thr Gly Ala Ala Gly Thr
      915   920   925

Cys Thr Gly Cys Gly Gly Ala Thr Gly Thr Gly Gly Ala Gly Cys Cys
   930   935   940

Cys Gly Thr Gly Thr Cys Ala Gly Cys Gly Thr Cys Thr Gly Cys Gly
945   950   955   960

Gly Cys Cys Cys Ala Cys Ala Thr Cys Cys Thr Gly Gly Gly Cys Gly
      965   970   975

Ala Gly Gly Thr Thr Thr Gly Cys Cys Gly Gly Gly Ala Gly Ala Ala
      980   985   990

Gly Cys Ala Gly Gly Ala Gly Gly Cys Gly Gly Cys Cys Gly Thr Cys
      995   1000   1005

Cys Cys Gly Cys Thr Gly Gly Thr Gly Cys Gly Gly Cys Thr Cys
   1010   1015   1020

Thr Thr Cys Cys Thr Ala Cys Ala Cys Thr Ala Thr Gly Gly Cys
   1025   1030   1035

Ala Gly Gly Gly Thr Gly Gly Thr Gly Cys Cys Ala Thr Thr Cys
   1040   1045   1050

Ala Thr Cys Ala Gly Thr Gly Cys Cys Ala Thr Cys Gly Cys Cys
   1055   1060   1065

Ala Gly Cys Gly Cys Gly Gly Ala Gly Gly Thr Gly Ala Ala Gly
   1070   1075   1080

Cys Gly Gly Ala Cys Cys Cys Ala Gly Gly Ala Cys Cys Cys Cys
   1085   1090   1095

Ala Ala Cys Ala Cys Cys Ala Thr Cys Thr Thr Cys Cys Gly Ala
   1100   1105   1110

Gly Gly Ala Ala Ala Cys Thr Cys Ala Cys Thr Gly Gly Cys Gly
    1115   1120   1125

Thr Cys Cys Ala Ala Gly Thr Gly Cys Ala Thr Cys Gly Ala Cys
    1130   1135   1140

Gly Ala Gly Ala Cys Cys Ala Thr Gly Ala Ala Gly Cys Thr Gly
    1145   1150   1155

Gly Cys Gly Gly Gly Gly Ala Thr Gly Cys Ala Thr Thr Ala Cys
    1160   1165   1170

Cys Thr Gly Cys Ala Thr Gly Thr Cys Ala Cys Cys Cys Thr Gly
    1175   1180   1185

Ala Ala Gly Cys Cys Cys Gly Cys Cys Ala Thr Cys Gly Ala Gly
    1190   1195   1200

Gly Ala Gly Ala Thr Ala Thr Gly Cys Cys Ala Gly Ala Gly Cys
    1205   1210   1215

Cys Ala Cys Ala Ala Ala Cys Cys Cys Thr Gly Thr Gly Ala Ala
    1220   1225   1230

Ala Thr Cys Gly Ala Cys Cys Cys Thr Gly Thr Gly Ala Ala Gly
    1235   1240   1245

Thr Thr Gly Ala Ala Ala Gly Ala Cys Gly Gly Ala Gly Ala Ala
    1250   1255   1260

Ala Ala Cys Cys Thr Thr Gly Ala Ala Ala Ala Cys Ala Ala Cys
    1265   1270   1275

Ala Thr Gly Gly Ala Gly Ala Ala Cys Cys Thr Ala Cys Gly Gly
    1280   1285   1290

Cys Ala Gly Thr Ala Thr Gly Thr Gly Gly Ala Cys Cys Gly Cys
    1295   1300   1305

Gly Thr Cys Thr Thr Cys Cys Ala Cys Gly Cys Cys Ala Thr Cys
    1310   1315   1320

Ala Cys Cys Gly Ala Gly Thr Cys Thr Gly Gly Gly Gly Thr Gly
    1325   1330   1335

Ala Gly Cys Thr Gly Cys Cys Cys Gly Ala Cys Cys Gly Thr Cys
    1340   1345   1350

Ala Thr Gly Thr Gly Thr Gly Ala Cys Ala Thr Cys Thr Thr Cys
    1355   1360   1365

Thr Thr Cys Thr Cys Cys Cys Thr Cys Cys Gly Gly Gly Ala Gly
    1370   1375   1380

Gly Cys Gly Gly Cys Gly Gly Cys Cys Ala Ala Gly Cys Gly Cys
    1385   1390   1395

Thr Thr Cys Cys Ala Gly Gly Ala Thr Gly Ala Cys Cys Cys Gly
    1400   1405   1410

Gly Ala Cys Gly Thr Cys Ala Gly Gly Thr Ala Cys Ala Cys Thr
    1415   1420   1425

Gly Cys Ala Gly Thr Gly Ala Gly Cys Ala Gly Cys Thr Thr Cys
    1430   1435   1440

Ala Thr Cys Thr Thr Cys Cys Thr Gly Ala Gly Gly Thr Thr Cys
    1445   1450   1455

Thr Thr Thr Gly Cys Gly Cys Cys Cys Gly Cys Cys Ala Thr Thr
    1460   1465   1470

Cys Thr Cys Thr Cys Cys Cys Cys Cys Ala Ala Cys Cys Thr Cys
    1475   1480   1485

Thr Thr Cys Cys Ala Gly Cys Thr Cys Ala Cys Gly Cys Cys Gly
    1490   1495   1500

Cys Ala Cys Cys Ala Cys Ala Cys Gly Gly Ala Cys Cys Cys Cys
    1505   1510   1515

Cys Ala Gly Ala Cys Gly Thr Cys Cys Ala Gly Gly Ala Cys Gly
    1520   1525   1530

Cys Thr Gly Ala Cys Ala Thr Thr Gly Ala Thr Cys Thr Cys Cys
    1535   1540   1545

Ala Ala Gly Ala Cys Cys Gly Thr Thr Cys Ala Gly Ala Cys Cys
    1550   1555   1560

Cys Thr Cys Gly Gly Cys Ala Gly Cys Cys Thr Gly Thr Cys Cys
    1565   1570   1575

Ala Ala Gly Thr Cys Cys Ala Ala Ala Thr Cys Thr Gly Cys Gly
    1580   1585   1590

Ala Gly Thr Thr Thr Thr Ala Ala Gly Gly Ala Gly Thr Cys Cys
    1595   1600   1605

Thr Ala Cys Ala Thr Gly Gly Cys Thr Ala Cys Ala Thr Thr Thr
    1610   1615   1620

Thr Ala Thr Gly Ala Ala Thr Thr Cys Thr Thr Cys Ala Ala Thr
    1625   1630   1635

Gly Ala Gly Cys Ala Gly Ala Ala Ala Thr Ala Thr Gly Cys Thr
    1640   1645   1650

Gly Ala Thr Gly Cys Gly Gly Thr Gly Ala Ala Gly Ala Ala Cys
    1655   1660   1665

Thr Thr Cys Thr Thr Gly Gly Ala Thr Cys Thr Gly Ala Thr Thr
    1670   1675   1680

Thr Cys Gly Thr Cys Cys Thr Cys Gly Gly Gly Gly Ala Gly Ala
    1685   1690   1695

Ala Gly Ala Gly Ala Cys Cys Cys Cys Ala Ala Gly Ala Gly Thr
    1700   1705   1710

Gly Thr Thr Gly Ala Gly Cys Ala Gly Cys Cys Cys Ala Thr Cys
    1715   1720   1725

Gly Thr Gly Cys Thr Thr Ala Ala Ala Gly Ala Ala Gly Gly Gly
    1730   1735   1740

Thr Thr Cys Ala Thr Gly Ala Thr Cys Ala Ala Gly Ala Gly Gly
    1745   1750   1755

Gly Cys Cys Cys Ala Ala Gly Gly Ala Cys Gly Gly Ala Ala Gly
    1760   1765   1770

Cys Gly Cys Thr Thr Thr Gly Gly Gly Ala Thr Gly Ala Ala Gly
    1775   1780   1785

```
Ala Ala  Thr Thr Thr Thr Ala  Ala Gly Ala Ala Gly  Ala Gly Ala
    1790            1795            1800
```

```
Thr Gly  Gly Thr Thr Thr Cys  Gly Cys Thr Thr Gly  Ala Cys Cys
    1805            1810            1815
```

```
Ala Ala  Cys Cys Ala Thr Gly  Ala Ala Thr Thr Thr  Ala Cys Cys
    1820            1825            1830
```

```
Thr Ala  Cys Cys Ala Cys Ala  Ala Ala Ala Gly Cys  Ala Ala Ala
    1835            1840            1845
```

```
Gly Gly  Gly Gly Ala Cys Cys  Ala Gly Cys Cys Thr  Cys Thr Cys
    1850            1855            1860
```

```
Thr Ala  Cys Ala Gly Cys Ala  Thr Thr Cys Cys Cys  Ala Thr Cys
    1865            1870            1875
```

```
Gly Ala  Gly Ala Ala Cys Ala  Thr Cys Cys Thr Gly  Gly Cys Ala
    1880            1885            1890
```

```
Gly Thr  Gly Gly Ala Gly Ala  Ala Gly Cys Thr Gly  Gly Ala Gly
    1895            1900            1905
```

```
Gly Ala  Gly Gly Ala Gly Thr  Cys Thr Thr Thr Cys  Ala Ala Ala
    1910            1915            1920
```

```
Ala Thr  Gly Ala Ala Ala Ala  Ala Cys Ala Thr Gly  Thr Thr Cys
    1925            1930            1935
```

```
Cys Ala  Gly Gly Thr Cys Ala  Thr Cys Cys Ala Gly  Cys Cys Ala
    1940            1945            1950
```

```
Gly Ala  Gly Cys Gly Thr Gly  Cys Gly Cys Thr Gly  Thr Ala Cys
    1955            1960            1965
```

```
Ala Thr  Cys Cys Ala Gly Gly  Cys Cys Ala Ala Cys  Ala Ala Cys
    1970            1975            1980
```

```
Thr Gly  Cys Gly Thr Gly Gly  Ala Gly Gly Cys Cys  Ala Ala Gly
    1985            1990            1995
```

```
Gly Ala  Cys Thr Gly Gly Ala  Thr Cys Gly Ala Cys  Ala Thr Thr
    2000            2005            2010
```

Cys Thr Cys Ala Cys Cys Ala Ala Ala Gly Thr Gly Ala Gly Cys
    2015   2020   2025

Cys Ala Gly Thr Gly Cys Ala Ala Cys Cys Ala Gly Ala Ala Gly
    2030   2035   2040

Cys Gly Cys Cys Thr Cys Ala Cys Cys Gly Thr Cys Thr Ala Cys
    2045   2050   2055

Cys Ala Cys Cys Cys Gly Thr Cys Cys Gly Cys Cys Thr Ala Cys
    2060   2065   2070

Cys Thr Gly Ala Gly Cys Gly Gly Cys Cys Ala Cys Thr Gly Gly
    2075   2080   2085

Cys Thr Gly Thr Gly Cys Thr Gly Thr Ala Gly Gly Gly Cys Gly
    2090   2095   2100

Cys Cys Ala Thr Cys Cys Gly Ala Cys Thr Cys Gly Gly Cys Thr
    2105   2110   2115

Cys Cys Gly Gly Gly Cys Thr Gly Cys Thr Cys Gly Cys Cys Cys
    2120   2125   2130

Thr Gly Cys Ala Cys Thr Gly Gly Cys Gly Gly Cys Cys Thr Cys
    2135   2140   2145

Cys Cys Ala Gly Cys Cys Ala Ala Cys Ala Thr Cys Cys Ala Gly
    2150   2155   2160

Cys Thr Gly Gly Ala Cys Ala Thr Thr Gly Ala Thr Gly Gly Gly
    2165   2170   2175

Gly Ala Cys Cys Gly Thr Gly Ala Gly Ala Cys Gly Gly Ala Gly
    2180   2185   2190

Cys Gly Thr Ala Thr Cys Thr Ala Cys Thr Cys Cys Cys Thr Cys
    2195   2200   2205

Thr Thr Cys Ala Ala Cys Thr Thr Gly Thr Ala Cys Ala Thr Gly
    2210   2215   2220

Ala Gly Cys Ala Ala Gly Cys Thr Gly Gly Ala Gly Ala Ala Gly
    2225   2230   2235

Ala Thr Gly Cys Ala Gly Gly Ala Gly Gly Cys Cys Thr Gly Thr
    2240   2245   2250

Gly Gly Gly Ala Gly Cys Ala Ala Ala Thr Cys Thr Gly Thr Gly
    2255   2260   2265

Thr Ala Thr Gly Ala Cys Gly Gly Cys Cys Cys Gly Gly Ala Gly
    2270   2275   2280

Cys Ala Gly Gly Ala Gly Gly Ala Gly Thr Ala Thr Thr Cys Gly
    2285   2290   2295

Ala Cys Gly Thr Thr Cys Gly Thr Cys Ala Thr Thr Gly Ala Cys
    2300   2305   2310

Gly Ala Cys Cys Cys Cys Cys Ala Gly Gly Ala Gly Ala Cys Cys
    2315   2320   2325

Thr Ala Cys Ala Ala Gly Ala Cys Gly Cys Thr Ala Ala Ala Gly
    2330   2335   2340

Cys Ala Ala Gly Thr Cys Ala Thr Cys Gly Cys Thr Gly Gly Gly
    2345   2350   2355

Gly Thr Thr Gly Gly Gly Gly Cys Thr Thr Thr Gly Gly Ala Gly
    2360   2365   2370

Cys Ala Gly Gly Ala Gly Cys Ala Cys Gly Cys Cys Cys Ala Gly
    2375   2380   2385

Thr Ala Thr Ala Ala Gly Ala Gly Gly Gly Ala Cys Ala Ala Gly
    2390   2395   2400

Thr Thr Cys Ala Ala Gly Ala Ala Gly Ala Cys Gly Ala Ala Ala
    2405   2410   2415

Thr Ala Thr Gly Gly Ala Ala Gly Cys Cys Ala Gly Gly Ala Gly
    2420   2425   2430

Cys Ala Cys Cys Cys Cys Ala Thr Cys Gly Gly Ala Gly Ala Cys
    2435   2440   2445

Ala Ala Gly Ala Gly Cys Thr Thr Cys Cys Ala Gly Ala Ala Cys
    2450   2455   2460

```
Thr Ala  Cys Ala Thr Cys Cys  Gly Gly Cys Ala Gly  Cys Ala Gly
    2465                2470                2475


Thr Cys  Cys Gly Ala Gly Ala  Cys Cys Thr Cys Cys  Ala Cys Thr
    2480                2485                2490


Cys Ala  Thr Thr Cys Cys Ala  Thr Thr Thr Ala Ala
    2495                2500                2505
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<210> 17
<211> 821
<212> PRT
<213> Homo sapiens

<400> 17

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Met Pro Thr Arg Val Cys Cys Cys Cys Ser Ala Leu Arg Pro Arg Tyr
1               5               10              15


Lys Arg Leu Val Asp Asn Ile Phe Pro Glu Asp Pro Lys Asp Gly Leu
            20              25              30


Val Lys Thr Asp Met Glu Lys Leu Thr Phe Tyr Ala Val Ser Ala Pro
        35              40              45


Glu Lys Leu Asp Arg Ile Gly Ser Tyr Leu Ala Glu Arg Leu Ser Arg
    50              55              60


Asp Val Val Arg His Arg Ser Gly Tyr Val Leu Ile Ala Met Glu Ala
65              70              75              80


Leu Asp Gln Leu Leu Met Ala Cys His Ser Gln Ser Ile Lys Pro Phe
            85              90              95


Val Glu Ser Phe Leu His Met Val Ala Lys Leu Leu Glu Ser Gly Glu
            100             105             110


Pro Lys Leu Gln Val Leu Gly Thr Asn Ser Phe Val Lys Phe Ala Asn
        115             120             125


Ile Glu Glu Asp Thr Pro Ser Tyr His Arg Arg Tyr Asp Phe Phe Val
    130             135             140


Ser Arg Phe Ser Ala Met Cys His Ser Cys His Ser Asp Pro Glu Ile
145             150             155             160
```

```
Arg Thr Glu Ile Arg Ile Ala Gly Ile Arg Gly Ile Gln Gly Val Val
            165             170             175

Arg Lys Thr Val Asn Asp Glu Leu Arg Ala Thr Ile Trp Glu Pro Gln
            180             185             190

His Met Asp Lys Ile Val Pro Ser Leu Leu Phe Asn Met Gln Lys Ile
            195             200             205

Glu Glu Val Asp Ser Arg Ile Gly Pro Pro Ser Ser Pro Ser Ala Thr
    210             215             220

Asp Lys Glu Glu Asn Pro Ala Val Leu Ala Glu Asn Cys Phe Arg Glu
225             230             235             240

Leu Leu Gly Arg Ala Thr Phe Gly Asn Met Asn Asn Ala Val Arg Pro
            245             250             255

Val Phe Ala His Leu Asp His His Lys Leu Trp Asp Pro Asn Glu Phe
            260             265             270

Ala Val His Cys Phe Lys Ile Ile Met Tyr Ser Ile Gln Ala Gln Tyr
            275             280             285

Ser His His Val Ile Gln Glu Ile Leu Gly His Leu Asp Ala Arg Lys
    290             295             300

Lys Asp Ala Pro Arg Val Arg Ala Gly Ile Ile Gln Val Leu Leu Glu
305             310             315             320

Ala Val Ala Ile Ala Ala Lys Gly Ser Ile Gly Pro Thr Val Leu Glu
            325             330             335

Val Phe Asn Thr Leu Leu Lys His Leu Arg Leu Ser Val Glu Phe Glu
            340             345             350

Ala Asn Asp Leu Gln Gly Gly Ser Val Gly Ser Val Asn Leu Asn Thr
            355             360             365

Ser Ser Lys Asp Asn Asp Glu Lys Ile Val Gln Asn Ala Ile Ile Gln
    370             375             380

Thr Ile Gly Phe Phe Gly Ser Asn Leu Pro Asp Tyr Gln Arg Ser Glu
385             390             395             400
```

Ile Met Met Phe Ile Met Gly Lys Val Pro Val Phe Gly Thr Ser Thr
            405   410   415

His Thr Leu Asp Ile Ser Gln Leu Gly Asp Leu Gly Thr Arg Arg Ile
         420   425   430

Gln Ile Met Leu Leu Arg Ser Leu Leu Met Val Thr Ser Gly Tyr Lys
         435   440   445

Ala Lys Thr Ile Val Thr Ala Leu Pro Gly Ser Phe Leu Asp Pro Leu
    450   455   460

Leu Ser Pro Ser Leu Met Glu Asp Tyr Glu Leu Arg Gln Leu Val Leu
465   470   475   480

Glu Val Met His Asn Leu Met Asp Arg His Asp Asn Arg Ala Lys Leu
         485   490   495

Arg Gly Ile Arg Ile Ile Pro Asp Val Ala Asp Leu Lys Ile Lys Arg
         500   505   510

Glu Lys Ile Cys Arg Gln Asp Thr Ser Phe Met Lys Lys Asn Gly Gln
         515   520   525

Gln Leu Tyr Arg His Ile Tyr Leu Gly Cys Lys Glu Glu Asp Asn Val
    530   535   540

Gln Lys Asn Tyr Glu Leu Leu Tyr Thr Ser Leu Ala Leu Ile Thr Ile
545   550   555   560

Glu Leu Ala Asn Glu Glu Val Val Ile Asp Leu Ile Arg Leu Ala Ile
         565   570   575

Ala Leu Gln Asp Ser Ala Ile Ile Asn Glu Asp Asn Leu Pro Met Phe
         580   585   590

His Arg Cys Gly Ile Met Ala Leu Val Ala Ala Tyr Leu Asn Phe Val
         595   600   605

Ser Gln Met Ile Ala Val Pro Ala Phe Cys Gln His Val Ser Lys Val
    610   615   620

Ile Glu Ile Arg Thr Met Glu Ala Pro Tyr Phe Leu Pro Glu His Ile
625   630   635   640

```
Phe Arg Asp Lys Cys Met Leu Pro Lys Ser Leu Glu Lys His Glu Lys
            645                 650             655

Asp Leu Tyr Phe Leu Thr Asn Lys Ile Ala Glu Ser Leu Gly Gly Ser
            660                 665             670

Gly Tyr Ser Val Glu Arg Leu Ser Val Pro Tyr Val Pro Gln Val Thr
            675                 680             685

Asp Glu Asp Arg Leu Ser Arg Arg Lys Ser Ile Val Asp Thr Val Ser
    690                 695             700

Ile Gln Val Asp Ile Leu Ser Asn Asn Val Pro Ser Asp Asp Val Val
705                 710             715                 720

Ser Asn Thr Glu Glu Ile Thr Phe Glu Ala Leu Lys Lys Ala Ile Asp
            725                 730             735

Thr Ser Gly Met Glu Glu Gln Glu Lys Glu Lys Arg Arg Leu Val Ile
            740                 745             750

Glu Lys Phe Gln Lys Ala Pro Phe Glu Glu Ile Ala Ala Gln Cys Glu
            755                 760             765

Ser Lys Ala Asn Leu Leu His Asp Arg Leu Ala Gln Ile Leu Glu Leu
    770                 775             780

Thr Ile Arg Pro Pro Pro Ser Pro Ser Gly Thr Leu Thr Ile Thr Ser
785                 790             795                 800

Gly His Ala Gln Tyr Gln Ser Val Pro Val Tyr Glu Met Lys Phe Pro
            805                 810             815

Asp Leu Cys Val Tyr
            820
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<210>   18
<211>   2466
<212>   DNA
<213>   Homo sapiens

<400>   18
atgcctaccc gagtatgctg ctgctgttcc gctttgcgtc ctcgctacaa acgcctggtg      60

gacaacatat tccctgaaga tccaaaagat ggccttgtga aaactgatat ggagaaattg     120

acattttatg cagtatctgc tccagagaaa ctggatcgaa ttggttctta cctggcagaa     180
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aggttgagca gggatgttgt cagacatcgt tctgggtatg ttttgattgc tatggaggca   240

ctggaccaac ttctcatggc ttgccattct caaagcatta agccatttgt agaaagcttt   300

cttcatatgg tggcaaagct gctggaatcg ggggaaccaa agcttcaagt tcttggaaca   360

aattcttttg tcaaatttgc aaatattgaa gaagacacac catcctatca cagacgttat   420

gactttttg tgtctcgatt cagtgccatg tgccattcct gtcatagtga tccagaaata   480

cgaacagaga tacgaattgc tggaattaga ggtattcaag gtgtggttcg caaaacagtc   540

aacgatgaac ttcgggccac catttgggaa cctcagcata tggataagat tgttccatcc   600

ctcctgttta acatgcaaaa gatagaagaa gttgacagtc gcataggccc tccttcttct   660

ccttctgcaa ctgacaaaga agagaatcct gctgtgctgg ctgaaaactg tttcagagaa   720

ctgctgggtc gagcaacttt tgggaatatg aataatgctg ttagaccagt ttttgcgcat   780

ttagatcatc acaaactgtg ggatcccaat gaatttgcag ttcactgctt taaaattata   840

atgtattcca ttcaggctca gtattctcac catgtgatcc aggagattct aggacacctt   900

gatgctcgta aaaagatgc tcccccgggtt cgagcaggta ttattcaggt tctgttagag   960

gctgttgcca ttgctgctaa aggttccata ggtccgacag tgctggaagt cttcaatacc   1020

cttttgaaac atctgcgtct cagcgttgaa ttcgaagcaa atgatttaca ggggggatct   1080

gtaggcagtg tcaacttaaa tacaagttcc aaagacaatg atgagaagat tgtgcagaat   1140

gctatcatcc aaacaatagg attttttgga agtaacctac cagattatca gaggtcagaa   1200

atcatgatgt tcattatggg gaaagtacct gtctttggaa catctaccca tactttggat   1260

atcagtcaac tagggggattt gggaaccagg agaattcaga taatgttgct gagatctttg   1320

cttatggtga cctctggata taaagcgaag acgattgtta ctgcactgcc agggtctttc   1380

ctggatcctt tgttatcacc atctctcatg gaggactacg aactgagaca gttggtcttg   1440

gaagtaatgc ataatctcat ggatcgtcat gacaataggg caaagcttcg agggatcaga   1500

ataataccgg atgtagctga cctaaagata aaaagagaaa aaatttgcag acaagacaca   1560

agtttcatga aaaagaatgg gcaacagctg tatcggcaca tatatttggg ttgtaaagag   1620

gaagacaacg ttcagaaaaa ctatgaacta ctttatactt ctcttgctct tataactatt   1680

gaactggcta atgaagaagt agttattgat ctcattcgac tggccattgc tttacaggac   1740

agtgcaatta tcaatgagga taatttgcca atgttccatc gttgtggaat catggcactg   1800

gttgcagcat acctcaactt tgtaagtcag atgatagctg tccctgcatt ttgccagcat   1860

gttagcaagg ttattgaaat tcgaactatg gaagcccctt attttctacc agagcatatc   1920

ttcagagata agtgcatgct tccaaaatct ttagagaagc atgaaaaaga tttgtacttt   1980

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ctgaccaaca agattgcaga gtcgctaggt ggaagtggat atagtgttga gagattgtca    2040

gttccgtatg taccacaagt aacagatgaa gatcgacttt ctagaagaaa aagcattgtg    2100

gacaccgtat ccattcaggt ggatatttta tccaacaatg ttccttctga tgatgtggtt    2160

agtaacactg aagaaatcac ttttgaagca ttgaagaaag caattgatac cagtggaatg    2220

gaagaacagg aaaaggaaaa gaggcgtctt gtgatagaga aatttcagaa agcacctttt    2280

gaagaaatag cagcacagtg tgaatccaaa gcaaatttgc ttcatgatag acttgcccaa    2340

atattggaac tcaccatacg tcctcctccc agtccatcag gaacactgac cattacttct    2400

gggcatgccc aataccaatc tgtcccagtc tatgagatga agtttccaga tctgtgtgtg    2460

tactga                                                               2466
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<210> 19
<211> 689
<212> PRT
<213> Homo sapiens

<400> 19

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Met Ala Val Val Ser Ala Val Arg Trp Leu Gly Leu Arg Ser Arg Leu
1               5                   10                  15


Gly Gln Pro Leu Thr Gly Arg Arg Ala Gly Leu Cys Glu Gln Ala Arg
            20                  25                  30


Ser Cys Arg Phe Tyr Ser Gly Ser Ala Thr Leu Ser Lys Val Glu Gly
            35                  40                  45


Thr Asp Val Thr Gly Ile Glu Glu Val Val Ile Pro Lys Lys Lys Thr
    50                  55                  60


Trp Asp Lys Val Ala Val Leu Gln Ala Leu Ala Ser Thr Val Asn Arg
65                  70                  75                  80


Asp Thr Thr Ala Val Pro Tyr Val Phe Gln Asp Asp Pro Tyr Leu Met
                85                  90                  95


Pro Ala Ser Ser Leu Glu Ser Arg Ser Phe Leu Leu Ala Lys Lys Ser
            100                 105                 110


Gly Glu Asn Val Ala Lys Phe Ile Ile Asn Ser Tyr Pro Lys Tyr Phe
            115                 120                 125
```

Gln Lys Asp Ile Ala Glu Pro His Ile Pro Cys Leu Met Pro Glu Tyr
    130   135   140

Phe Glu Arg Gln Ile Lys Asp Ile Ser Glu Ala Ala Leu Lys Glu Arg
145   150   155   160

Ile Glu Leu Arg Lys Val Lys Ala Ser Val Asp Met Phe Asp Gln Leu
           165   170   175

Leu Gln Ala Gly Thr Thr Val Ser Leu Glu Thr Thr Asn Ser Leu Leu
         180   185   190

Asp Leu Leu Cys Tyr Tyr Gly Asp Gln Glu Pro Ser Thr Asp Tyr His
      195   200   205

Phe Gln Gln Thr Gly Gln Ser Glu Ala Leu Glu Glu Glu Asn Asp Glu
    210   215   220

Thr Ser Arg Arg Lys Ala Gly His Gln Phe Gly Val Thr Trp Arg Ala
225   230   235   240

Lys Asn Asn Ala Glu Arg Ile Phe Ser Leu Met Pro Glu Lys Asn Glu
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His Ser Tyr Cys Thr Met Ile Arg Gly Met Val Lys His Arg Ala Tyr
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Glu Gln Ala Leu Asn Leu Tyr Thr Glu Leu Leu Asn Asn Arg Leu His
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Ala Asp Val Tyr Thr Phe Asn Ala Leu Ile Glu Ala Thr Val Cys Ala
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Ile Asn Glu Lys Phe Glu Glu Lys Trp Ser Lys Ile Leu Glu Leu Leu
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Arg His Met Val Ala Gln Lys Val Lys Pro Asn Leu Gln Thr Phe Asn
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Thr Ile Leu Lys Cys Leu Arg Arg Phe His Val Phe Ala Arg Ser Pro
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Ala Leu Gln Val Leu Arg Glu Met Lys Ala Ile Gly Ile Glu Pro Ser
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Leu Ala Thr Tyr His His Ile Ile Arg Leu Phe Asp Gln Pro Gly Asp
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Pro Leu Lys Arg Ser Ser Phe Ile Ile Tyr Asp Ile Met Asn Glu Leu
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Met Gly Lys Arg Phe Ser Pro Lys Asp Pro Asp Asp Asp Lys Phe Phe
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Gln Ser Ala Met Ser Ile Cys Ser Ser Leu Arg Asp Leu Glu Leu Ala
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Tyr Gln Val His Gly Leu Leu Lys Thr Gly Asp Asn Trp Lys Phe Ile
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Gly Pro Asp Gln His Arg Asn Phe Tyr Tyr Ser Lys Phe Phe Asp Leu
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Ile Cys Leu Met Glu Gln Ile Asp Val Thr Leu Lys Trp Tyr Glu Asp
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Leu Ile Pro Ser Ala Tyr Phe Pro His Ser Gln Thr Met Ile His Leu
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Leu Gln Ala Leu Asp Val Ala Asn Arg Leu Glu Val Ile Pro Lys Ile
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Trp Lys Asp Ser Lys Glu Tyr Gly His Thr Phe Arg Ser Asp Leu Arg
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Glu Glu Ile Leu Met Leu Met Ala Arg Asp Lys His Pro Pro Glu Leu
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Gln Val Ala Phe Ala Asp Cys Ala Ala Asp Ile Lys Ser Ala Tyr Glu
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Ser Gln Pro Ile Arg Gln Thr Ala Gln Asp Trp Pro Ala Thr Ser Leu
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Asn Cys Ile Ala Ile Leu Phe Leu Arg Ala Gly Arg Thr Gln Glu Ala
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Trp Lys Met Leu Gly Leu Phe Arg Lys His Asn Lys Ile Pro Arg Ser
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Glu Leu Leu Asn Glu Leu Met Asp Ser Ala Lys Val Ser Asn Ser Pro
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Ser Gln Ala Ile Glu Val Val Glu Leu Ala Ser Ala Phe Ser Leu Pro
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Ile Cys Glu Gly Leu Thr Gln Arg Val Met Ser Asp Phe Ala Ile Asn
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Gln Glu Gln Lys Glu Ala Leu Ser Asn Leu Thr Ala Leu Thr Ser Asp
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Ser Asp Thr Asp Ser Ser Ser Asp Ser Asp Ser Asp Thr Ser Glu Gly
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